

Teacher Performance Pay: Synthesis of Plans, Research, and Guidelines for Practice

By Herbert G. Heneman III, Anthony Milanowski, and Steven Kimball

Introduction

The single salary schedule has ruled the delivery of teacher pay for decades, despite long-standing criticism that it fails to link some portion of teachers' pay to their performance. In recent years, there has been some experimentation with performance pay for teachers. Early attempts focused on the development of merit pay, in which pay raises were linked to subjective evaluations of teacher performance. Subsequent evaluations of merit pay plans questioned their effectiveness, especially given their limited survival, though it was acknowledged that the problem was not necessarily merit pay per se, but the way the plans were designed, implemented, and administered (Hatry, Greiner, & Ashford, 1994). Notwithstanding these unsuccessful experiences, national surveys have found that teacher attitudes toward some forms of performance pay are not unfavorable (Ballou, 2001; Ballou & Podgursky, 1993).

In the 1990s, other forms of performance pay began to emerge at the state and district levels. Notable were school-based performance awards and knowledge- and skill-based pay plans. Elements from these plans have now been incorporat-

ed into combined pay plans. And while none of these plans has been widely adopted, they have drawn intensive national scrutiny and study. This Policy Brief focuses on the nature and effectiveness of these plans. We first provide generic descriptions of three types of plans, followed by a synthesis of research results on their effectiveness. A set of guidelines for effective practice is then provided to help states and districts embarking on these forms of performance pay. We conclude with a look ahead at recent developments in performance pay plans and other deviations from the traditional teacher salary schedule.

Teacher Performance Pay Plans

What exactly constitutes a performance pay plan for teachers? Our view is quite broad. We define teacher performance pay as any systematic process for measuring teacher behavior or results, and linking these measurements to changes in teacher pay. Indicators of teacher performance may include improving professional skills, changing classroom behavior, and producing desired outcomes. Figure 1 illustrates our view.

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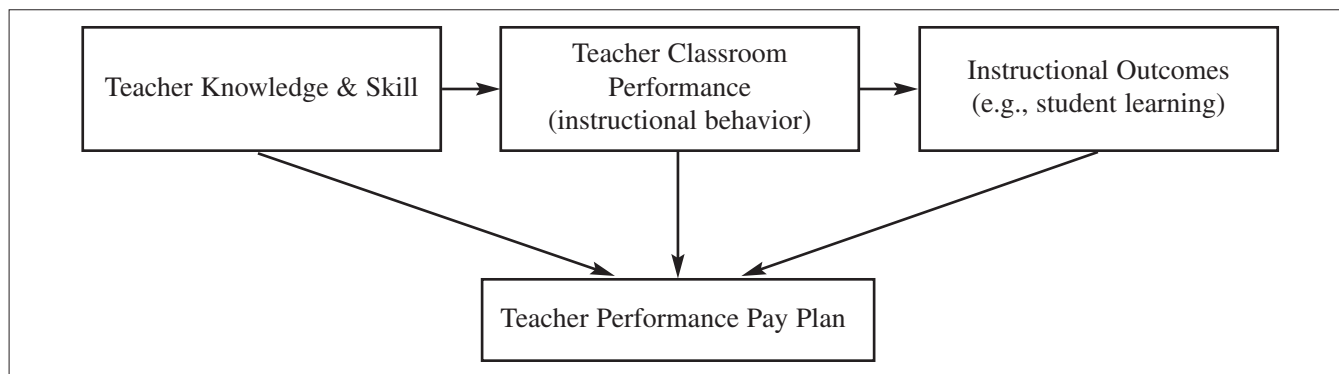
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Figure 1. Components of a Performance Pay Plan for Teachers



A teacher's knowledge and skills are the basic inputs that a teacher brings to the instructional process. These skills include knowledge of content and pedagogy, skill in assessment and classroom management, and general abilities, attitudes, and personality dispositions. Knowledge and skills are assessed via testing, certification (e.g., by the National Board for Professional Teaching Standards) and classroom observation. Since teacher knowledge and skills may need upgrading to improve instruction, teacher performance can be defined and measured in terms of the teacher's success in increasing the variety and level of instructionally relevant knowledge and skills. Pay can be increased accordingly.

Classroom performance encompasses the teacher's actual instructional behavior (also called teacher performance competence), and is typically measured by observations such as those done as part of a teacher evaluation system. These measurements can be linked with pay. Instructional outcomes are at least partly a result of teacher instruction, and typically are assessed via tests of student learning, and perhaps other measures like attendance and graduation rates. Teacher performance can be defined in terms of these outcomes, and pay changes (e.g., bonuses) can be linked to outcome measures. The actual impacts of teacher knowledge and skill on teacher instructional behavior, and of instruction on outcomes, are not fully understood. While researchers work to better specify these relationships, those responsible for initiating and designing performance pay plans must supplement the existing research with their own intuition and experience to make reasonable estimates about the likely impacts of rewarding teachers for these three kinds of performance.

Teacher performance plans represent one departure from the traditional teacher pay schedule. Other kinds of departures include differentiated pay (e.g., more pay for mentor teachers or team leaders), pay for teaching in hard-to-staff or high-need schools, and incentives to attract and retain teachers in shortage areas. It should be noted that these systems also may require assessments of teacher knowledge, skill, or performance. Ensuring that mentor teachers have the needed skills, or that those teachers attracted to high-need schools have the skills to help improve student achievement, are examples of where assessments may be needed. Descriptions of performance pay plans are shown in Table 1.

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In school-based performance award programs, performance is measured and awarded at the school (as opposed to individual teacher) level. Specific school-wide goals are established, and bonuses are paid to teachers and other staff according to the degree of goal attainment. Knowledge- and skill-based pay plans measure and reward individual teacher behaviors or competencies thought to be linked to high-quality teacher performance. Teachers receive bonuses or increases in base salary for the acquisition of new competencies, classroom performance mastery, and certification by the National Board for Professional Teaching Standards (NBPTS). A combined plan contains elements of both of the above plans, plus potentially other elements, such as pay for measured growth in student achievement. The recently implemented Denver ProComp plan is an example of a combined plan. It measures performance in four areas (teacher knowledge and skills, professional evaluation, market incentives, and student growth). The single salary schedule is eliminated. In its place is a base salary to which is added specific amounts of performance pay in each of the four areas.

Research Summary

Research evaluating the impacts of these pay plans has been conducted at both state and district sites across the country. The number of studies, however, is very small, and few if any estimate the effect of implementing a plan on student achievement. A synthesis of key research findings is shown in Exhibit Four (school-based performance awards), Exhibit Five (knowledge- and skill-based pay), and Exhibit Six (combined plan) in Appendix A. The findings focus on impacts on student achievement (not always assessed), impacts on teachers, and administrative and alignment problems. At the bottom of each exhibit are citations to the research. The reader is encouraged to consult the research for fuller descriptions of the research sites and their plans, as well as methodology and

Table 1. Descriptions of Performance Pay Plans

Types of Performance Pay Plans	Description
School-Based Performance Award	<ul style="list-style-type: none"> • School-level performance pay plan. • District or State establishes school-wide goals for student achievement (level or growth) and other performance indicators such as graduation, Advanced Placement, and attendance rates. • Goals are annual or multi-year and require performance maintenance or improvement (relative to a base, relative to a standards, or value added). • There are pre-determined bonus amounts and payout criteria. • Bonuses paid to teachers and other staff, or into a school activity fund. • Full bonus (typically \$500-\$1,500) is paid to teachers and administrators; smaller (often half) bonus paid to other school staff. • Single salary schedule remains intact.
Knowledge- and Skill-Based Pay	<ul style="list-style-type: none"> • Base pay increase or bonus (typically \$300-\$3,000) for competency demonstration: <ul style="list-style-type: none"> ✓ Skill blocks-technology, student assessment, curriculum unit design, etc. ✓ Portfolio completion ✓ Dual certification ✓ Graduate degree in subject taught • Base pay increase or bonus for classroom performance mastery (typically \$1,000-\$3,000): <ul style="list-style-type: none"> ✓ Standards-based teacher evaluation • Base pay increase or bonus for NBPTS certification (typically \$1,000-\$15,000) • May involve changes to single salary schedule: <ul style="list-style-type: none"> ✓ Fewer steps ✓ Fewer or redefined lanes ✓ Performance-linked career ladder progression
Combined Plan	<ul style="list-style-type: none"> • Components from various types of plans are used. • Denver ProComp Plan: Additional pay on top of salary index amount (\$34,200) for meeting the following requirements: <ul style="list-style-type: none"> ✓ Knowledge and skills (up to \$4,762) <ul style="list-style-type: none"> ◦ Professional development units ◦ Graduate degree/national certificates and license ◦ Tuition reimbursement ✓ Standards-based teacher evaluation (up to \$1,366) ✓ Market incentives (up to \$1,025) <ul style="list-style-type: none"> ◦ Hard-to-staff subjects and schools ✓ Student growth (up to \$2,052) <ul style="list-style-type: none"> ◦ Student success in meeting two annual learning objectives ◦ State test scores ◦ Distinguished school • Funded in part by a \$25 million voter referendum on the plan, not time-limited and inflation adjusted over time. • Single salary schedule is replaced.

measures, analysis, findings, and discussions of limitations and implications. A recent brief overview of research on performance pay plans, as well as differentiated pay and recruitment and retention incentives, may be found in Goldhaber (2007).

School-based performance-award plans were evaluated at several sites. It was found that in addition to performance bonuses, teachers experienced a large number of both positive and negative outcomes, and that both the size of the bonus and the fairness of the bonus system were of critical importance to teachers. Another key finding was that teachers' expectancies that their own efforts would help the school meet its performance goals actually predicted whether the school subsequently did so. This finding led us to conclude that districts need to provide teachers with specific performance supports and resources to help them meet goals, and that human resource (HR) systems can directly aid in this effort.

Research findings on knowledge- and skill-based pay plans are varied, due to the number of different types of plans evaluated. The competency demonstration plan in Douglas County, CO, was generally well received by the teachers. However, teachers there reported difficulty in understanding the specific requirements and payouts, and they were bothered by the preparation and paperwork demands of the plan. Teachers' classroom-performance mastery was studied extensively under standards-based teacher evaluation systems. In these systems teacher evaluation is based on a performance competency model, such as Danielson's (1996) Framework for Teaching. Key findings were that teachers accepted the performance competencies (teaching standards) underlying the plan, and that ratings of teachers' classroom performance on these competencies were predictive of value-added student learning in reading and math. Teachers were bothered by a lack of procedural knowledge about the system and also by the many implementation glitches that occurred. It also was found that the systems were designed and implemented as "stand-alone" systems, were not linked to a broader district strategy of performance improvement or to HR systems, and did not apply to principals and other administrators. With one exception, teachers subsequently resisted and rejected efforts to link evaluations to pay raises. Certification by the NBPTS just recently has come under research scrutiny. Results suggest that certified teachers do, on the average, have students with higher value-added student

achievement. High payouts to certified teachers have raised questions about the cost-effectiveness of certification.

Combined plans are in their infancy, with little relevant research. An exception is a partial evaluation of a pilot of the Denver ProComp plan. The evaluation focused on the student growth component. It was found that the *quality* of the two learning objectives each teacher was required to set did relate to the percentage of students meeting learning goals. Teacher reactions were mixed, with favorable reports about the focus on student achievement, but concerns about fairness, trust in the system, and the performance reviews conducted by principals. As with the other plans, problems of alignment (including with HR guidelines) were large and posed a major hindrance.

The overall conclusion that emerges from these studies is that performance pay plans have met with some, but limited, initial success. Evidence of a substantial positive impact on either student achievement or teacher performance is lacking, and teachers report a wide variety of both positive and negative reactions to local plans. Is the mixed evidence a reflection of inherent and immutable flaws in performance pay for teachers, or is it more a matter of how the plans have been designed, implemented, and managed? We think the latter is more plausible. Accordingly, we next provide a set of guidelines for policy and practice to help states and districts do a better job of using teacher performance pay. It should be noted that the suggestions call for major changes in practice; the suggestions are not for those with faint vision, will, skill, or budget.

Guidelines for Policy and Practice

Results of the research surveyed above, coupled with our own extensive field experience in conducting research and analyzing state and district actions and problems, lead us to offer the following guidelines for policy and practice. While we acknowledge the limited number of studies underlying these recommendations, we think these guidelines will provide a useful starting point for those embarking on the design and implementation of a performance pay plan for teachers. These guidelines are a synthesis of suggestions we have made previously (Heneman III, Milanowski, Kimball & Odden, 2006; Kelley, Odden, Milanowski & Heneman III, 2000; Odden, Kelley, Heneman III, & Milanowski, 2001).

Prerequisites for a Performance Pay Plan

Guarantee Stable and Adequate Funding

Stable and adequate funding of the new program is an absolute necessity. Without it the program likely will not get off the ground, or if it manages to do so, will fade away. Teachers are suspicious of performance pay because of funding questions and often are unwilling to buy into the program and respond positively because of this skepticism. The funding need not be an external infusion of new dollars; funding also can come about internally through a combination of resource reallocation, veteran teacher attrition (to be replaced with less costly novices), and reduced backloading of the single salary schedule (Odden & Wallace, 2007).

Provide Competitive Total Compensation

The total compensation package for teachers comprises salary, benefits, and performance pay (if any). Since performance pay likely will be a relatively small component of total compensation, the burden will continue to fall on salary and benefits to meet the market test of being strong enough to attract and retain sufficient numbers of highly qualified teachers (Odden & Wallace, 2006). The salary and benefit package must be competitive before embarking on a performance pay program. It is fruitless and self-defeating to build a performance pay plan atop noncompetitive salaries and benefits. It also is important not to overlook high-cost benefits such as pensions when assessing competitiveness. Pensions have the potential to be used successfully for attraction and retention purposes, despite current roadblocks to such use (Kimball, Heneman III, & Kellor, 2005).

Build Strong Measurement Systems

A performance pay plan requires, and is driven by, a performance measurement system. The system must provide reliable, valid performance scores, as well as other information useful for judging and guiding performance improvement. In some instances, the measurement system is straightforward, such as recording whether a teacher has completed a professional-development activity or obtained a certification. More likely, however, the system will be more complex, requiring assessments of classroom performance (e.g., standards-based teacher evaluation) or assessments of student performance (e.g., student

achievement, value-added learning). Whatever its exact nature it is wise to ensure that the measurement system delivers reliable performance data. Using inaccurate, delayed, or difficult-to-retrieve performance data will undermine the plan's fairness and threaten its survival. A related measurement-system matter involves building databases that link teachers to the schools they teach in, their students, subjects taught, performance evaluation results, seniority, and professional-development accomplishments. The need for such an integrated human-resources information system has become obvious to many states and districts, especially to support a total performance improvement strategy and alignment of human resources.

Gauge Likely Teacher Reactions to the Performance Pay Plan

Teachers have multiple reactions to performance pay plans, based both on their experiences and on plan design features. Our research shows that it is important to gauge reactions in four areas: differentiation, performance motivation, fairness, and acceptance.

A. Differentiation

The single-salary schedule has been the pay delivery mechanism for decades, and teachers view it as the accepted and fair method of compensation (Odden & Kelley, 2002). Within the single-salary schedule, there are only two types of differentiation among teachers: seniority and educational credits. Both criteria are viewed as objective and have been inculcated into teachers as legitimate bases for determining their pay. Introduction of performance as an additional basis of differentiation often is viewed as threatening since it signals a focus on a new criterion—actual performance.

Consequently, states and districts must gauge whether teachers are ready for performance-based pay differentiation. Readiness must be gauged in terms of teachers' views on the viability of performance pay in both principle and practice. Lacking clear signs of readiness, there will need to be extensive discussions with teachers about the viability of a performance pay plan prior to its introduction. It may be necessary to exempt certain teachers (e.g., more senior ones) from participating in the new pay plan. Alternatively, the barriers to acceptance may be so high that pursuit of performance pay may be in vain.

To effectively motivate efforts to improve performance, pay differentiation must continue over time. Research suggests, however, that it does not. Over time, teachers exert pressure to lower performance standards increasing the number of teachers who become eligible for performance pay (Hartry et al, 1994; Murnane and Cohen, 1986). While such an eventuality may enhance acceptance of the plan, it also drives up costs, creating long-term funding issues. If performance standards are to be maintained, the number of teachers eligible may have to be limited or the size of the payouts reduced—either of which would raise teacher acceptance issues.

B. Teacher Motivation

A performance pay plan seeks to motivate teachers to focus on and exert effort toward desired behaviors and outcomes. Therefore, it is important to assess the extent to which the performance pay plan is consistent with accepted principles of employee motivation (Lawler, 1990; Odden & Kelley, 2002). Three principles are critical:

1. **Teachers must value the reward.** The form (i.e., base-pay increase or bonus) and amount of performance pay must be sufficient to motivate teachers to seek it. Relatively small salary increases or bonuses (less than 2 percent of base pay) will not work. Performance-pay plans should not be built on trifling amounts of financial reward.

It should be remembered that any performance pay plan will create numerous ancillary rewards and penalties, referred to collectively as “working conditions.” These include a sense of goal accomplishment, feedback and assistance toward improvement, teacher and student learning, stress, and sanctions. Examples of these are shown in Exhibits 2 and 4. Studies of teacher satisfaction and turnover indicate that other important rewards or penalties associated with teaching include opportunities for leadership experience, level of cooperation among teachers, availability of materials and resources, level of student misconduct and discipline, and teacher participation in decision-making (Ingersoll, 2001). Thus, the total reward environment must be judged to determine if it is, on balance, a positively rewarding one that teachers will seek out and remain in.

2. **Teachers must see the performance-pay link.** Often referred to as “line of sight,” teachers must recognize and understand the connection between their performance and their pay. The link

is expressed in a payout formula. In some cases the link is straightforward, such as a \$500 bonus for completion of a skill block, and the line of sight is clear. In other cases, the payout formula is complex, clouding the line of sight. In common goal plans, for example, the payout formula may be difficult to understand due to the use of multiple performance indicators, differential weighting of the indicators, and more than one performance level warranting some amount of performance pay. It is important to gauge whether the payout formula is understandable, and whether there is adequate communication with teachers. The Denver ProComp plan is excellent in this regard since it has on its website (denverprocomp.org) a salary calculator that teachers can use to calculate the payouts they would receive for various accomplishments.

3. **Teachers must see an effort-performance link.** Often referred to as teacher expectancy, this link is a subjective one in which teachers judge the probability that a focused, intensive effort on their part will result in the desired performance. Many factors can potentially thwart teacher expectancies. Examples include very difficult performance goals, nonspecific performance ratings, lack of resources to support strong effort, inadequate performance management (performance planning, observation, evaluation, feedback, coaching) by principals, inadequate and unfocused professional development, and unmotivated students. The performance pay plan must be assessed in terms of the presence of such roadblocks and whether they can be overcome in the design of the system prior to its adoption. The performance pay plan must provide teachers every possible opportunity to be successful in their performance.

C. Fairness

Teachers’ sense of the performance pay plan’s fairness is an essential ingredient for acceptance. At a minimum, the issue of fairness can be divided into distributive and procedural components. *Distributive fairness* refers to whether the form, amount, and formula for the payout are perceived to be fair. *Procedural fairness* represents teachers’ feelings about how the plan is implemented and administered. Fairness perceptions may also be more specific and focused on particular elements of the plan, such as the performance measurement system, the performance management practices of the principal, and the supports that are provided to teachers to enhance their performance. What evidence is there that teachers perceive the program

to be fair? This is a critical question to ask of any performance pay plan.

D. Acceptance

Ultimately, teachers must come to accept the plan. Acceptance represents a willingness to work within the plan, follow its procedures, trust administrators and teacher association leaders, seek out ways to improve performance, experience a satisfying work environment, and remain in one's job (Heneman & Milanowski, 2001). Teacher acceptance ultimately will determine the effectiveness and survival of the performance pay plan. Teachers' judgments about differentiation, motivation, and fairness will contribute heavily to decisions about whether or not to accept the plan.

Both initial and continued acceptance are likely to be problematic. In Cincinnati, teachers overwhelming voted to reject linking a standards-based teacher evaluation to a jointly designed performance pay plan, and to oust the union leader who championed the new plan. Even the carefully crafted Denver ProComp plan received less than 60 percent vote approval from teachers, and only about 30 percent of eligible teachers opted in during the first two annual opt-in periods. And in Kentucky, resistance from the state teachers' association led to the elimination of bonuses that were part of a state-wide school-based performance award program. At the Vaughan Charter School in Los Angeles, the performance pay plan survived, but initial teacher acceptance was low until teachers' concerns about fairness and performance feedback were addressed and the number of senior teachers shrunk due to turnover. In short, continued acceptance and survival of performance-pay plans may be problematic, as was the case with merit pay plans (Hartry et al, 1994; Murnane and Cohen, 1986).

Designing the Performance Pay Plan

Include Principals and Administrators

It is an anomaly that proposals for performance pay for teachers rarely suggest inclusion of principals, administrators, and superintendents. Their exclusion sends many unfortunate signals to teachers, one being that the burden of making improvements falls solely on their shoulders, and that principals and administrators are exempt from the need to be effective performance managers of their teachers. A performance pay plan is really a performance improvement plan, and it should include all of those responsible for improving per-

formance. There should be a performance management chain throughout the instructional hierarchy, with the performance pay plan but a single (albeit critical) component of the improvement plan.

Develop a Performance Improvement Strategy and Plan

As noted, a performance pay plan should be embedded within a broader strategy to improve the schools. The linking of performance results to pay is insufficient to drive performance improvement. The part of the improvement plan that is of relevance here pertains to teachers, specifically the need to remove roadblocks to their individual improvement and to provide them with performance enablers, the enablers being actions and programs that facilitate the development and use of new knowledge and skills that will help teachers deliver higher performance. Examples include professional development, mentoring, professional learning communities, and feedback and coaching. Such enablers foster a higher expectancy of achieving good results and thus motivation to improve performance.

Align Human Resource Systems to Performance Improvement

Many of the drivers of teacher performance improvement reside within the Human Resources (HR) domain (Heneman & Milanowski, 2004). Indeed, there are eight major HR practice areas, and each area has components that can be aligned with a teacher performance improvement plan. The eight HR practice areas are teacher recruitment, selection, induction, mentoring, professional development, compensation, performance management, and instructional leadership. Each of these areas must focus the content of its programs on the knowledge, skills, and performance competencies that teachers need to be successful in the classroom. During recruitment and selection, for example, desired performance competencies can be identified, sought, and assessed in job candidates. In induction and mentoring, teachers can receive targeted information and assistance from other teachers centered around the performance competencies. Professional development can be revamped so that only courses and in-service activities that address the performance competencies are offered and "count" toward movement on the single salary schedule. In the compensation area, the district can offer various sweeteners (hiring bonuses, relocation assistance, higher placement on the salary schedule) for candidates with

exceptional competencies. Performance management practices by principals can be honed to help teachers improve via better performance planning, observation and evaluation, and feedback and coaching. Finally, instructional leaders themselves should be selected and trained on the basis of their competencies in managing teacher performance, and should be held accountable for their performance. In these myriad ways, HR practices can be aligned around teacher performance and become an important component of an overall strategy to improve teacher performance.

Engage the Teachers' Association

Active engagement of the teachers' association is not only legally necessary, but desirable in a practical sense. In myriad ways the association can prove helpful in preparing teachers for performance improvement, and for pay plan design, implementation, communication, follow through, and revision. The teachers' association can thus function as a performance enabler for teachers. It appears that most performance pay plans are designed and piloted outside the normal bargaining process, a practice we have experienced and endorse. This approach, it should be noted, may require a special memorandum of understanding, special design and implementation teams, and joint communication activities.

Build Capacity

It is our experience that teachers, administrators, and teacher association leaders lack the necessary knowledge and skills to effectively design and implement performance pay plans. This is understandable, given the decades-long reliance on the single salary schedule. For those who "grew up" under the traditional pay plan, nothing in their experience would prepare them for performance pay in all its complexities. Those thinking of, or actually pursuing, performance pay need information and training. For example, the authors recently conducted a two-day workshop for key administrators and teacher association leaders in a large southwestern district. We reviewed the design components of the various types of plans, identified key design issues, and engaged in the mock development of various plans using district/teacher association design groups.

Implementing the Performance Pay Plan

It is necessary to distinguish the design of the performance pay plan from its implementation. Careful design does not guarantee successful implementation. In our experience, the complexities and demands of implementation are vastly underestimated, leading to serious problems of on-the-ground management and teacher acceptance of the plan. We believe there are four key requirements for strong implementation:

1. Identification of a designated "champion" and formal leader for the plan;
2. Continual engagement by top management with the plan;
3. Attention to details and "drill down" of plan requirements to all systems involved, to avoid changing timelines and deadlines, modifying the design midstream, and confusing teachers and administrators; and
4. Constant communication with teachers and principals (the Denver ProComp plan is exemplar in this regard).

It is wise to develop implementation plans at the same time as the performance pay plan itself is designed. This will create a synergy that will help create not only a better plan, but a better launch of it.

Conduct a Pilot of the Performance Pay Plan

Based on the above guidelines, it seems a foregone conclusion that conducting a pilot of the pay program is the preferred way to begin. This will allow for capacity building and scaling up and also will provide an opportunity for all affected to learn about the actual system in practice. In turn, the lessons learned from the pilot should be helpful in moving to full implementation and gaining the teacher motivation and acceptance necessary for the plan to be effective and to survive.

Looking Ahead

To date there have been very few states and districts that have experimented with performance pay plans for teachers, and even fewer that have conducted systematic research on their effectiveness. Our descriptions of those plans and the evaluation research results suggest a rather checkered set of experiences and outcomes. Our guidelines for practice, while based on a limited set of studies that used nonexperimental evaluation designs,

can be extrapolated in the design and implementation of new plans in ways that will help them be more effective than seems to be the case to date.

There will be ample opportunities to apply these guidelines as new attempts at performance pay emerge. Arizona and Minnesota are encouraging districts to develop performance pay plans and submit them to the state for review and possible funding. Florida is requiring districts to develop performance pay plans under the new Special Teachers Are Rewarded (STAR) program. Texas is implementing three related performance pay plans under the Governor's Educator Excellence Award Program. The National Institute for Excellence in Teaching's Teacher Advancement Program (TAP) has been expanding rapidly in individual schools and districts. The federal government's Teacher Incentive Fund provides for experimentation, with technical assistance and monitoring, from an independent panel of experts. With this new wave of plans, the performance pay plan umbrella has opened wider to include new types of plans not covered in this Brief. Most important among these are plans that link pay increases or bonuses to value-added measures of the achievement of the teacher's students.

We think that all of the issues raised in our guidelines for practice also will be relevant to other types of teacher compensation innovations not covered in this Brief. In hard-to-staff schools, for example, will the hiring bonus be of sufficient size, and will working conditions improve enough to make the school an attractive alternative for teachers to not only join but remain in? In value-added plans, will teachers accept differentiation based on test results? Will teachers have a strong expectancy that their own efforts will lead to gains in student learning? Will the bonuses be well funded and sufficient in size? Will HR systems be realigned to support value-added performance improvement?

It will be important to systemically evaluate the design and implementation of these new pay plans. It will be important to evaluate multiple outcomes, including student achievement, teacher reaction, and cost effectiveness. It also will be important to determine if the guidelines for practice presented in this Brief carry over into these plans (as we hypothesize they will do), and to develop new guidelines for practice specific to the new plans.

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Appendix A.1. Research Findings on School-Based Performance Award Programs (SBPA)

Program Evaluation	Research Findings
SBPA in Charlotte-Mecklenburg, North Carolina; Kentucky; and Maryland	<ul style="list-style-type: none"> • SBPA create both positive (goal attainment, bonus, recognition, increased learning for students and self) and negative (sanctions for not meeting goals, increased stress) outcomes for teachers. • Bonuses need to be large (3-5% of base salary) to be motivational. • Fairness of SBPA goals, components, and procedures is critical to teachers; constant communication about these with teachers is essential. • The higher teachers' expectancy that their efforts will result in the school achieving its goals, the higher the subsequent school performance. • The SBPA must build in ways to increase teacher expectancy by providing performance enablers such as structured teacher collaboration, focused principal leadership, target professional development, performance feedback, and adequate district resources. • Teacher turnover is higher in schools that do not meet their goals and win bonuses.
SBPA in Dallas, Texas	<ul style="list-style-type: none"> • Compared to other Texas school districts without a SBPA, the Dallas program increased pass rates on math and reading tests for seventh grade White and Hispanic students, but not Black students. • Compared to the other school districts, dropout rates declined more in Dallas. • Replacement turnover rates for principals increased during the SBPA in both effective and ineffective schools.
<p><i>Citations:</i> Heneman, H. G. III (1998), Heneman, H. G. III, & Milanowski, A. (1998, 1999); Kelley, C., Conley, S., & Kimball, S. (1999); Kelley, C., Heneman, H. G. III, & Milanowski, A. (2002); Kelley, C., Odden, A., & Heneman, H. G. III. (2000); Ladd, H. (1999); Milanowski, A. (1999).</p>	

Appendix A.2. Research Findings on Knowledge- and Skill-Based Pay

Program Evaluation	Research Findings
A. Competency Demonstration	
Evaluation of the Douglas County, CO Plan	<ul style="list-style-type: none"> • Understanding of the overall pay plan was higher among experienced teachers. • The Outstanding Teacher Award (based on a specially-prepared portfolio) had mixed teacher reactions; major problem was burden of portfolio preparation. • Site responsibility pay was too little, with too much paperwork. • Skill Block pay was strongly favored by teachers. • The Group Incentive Plan (voluntary participation, school wide, site derived objectives) was very popular and perceived as improving student performance in middle and elementary schools; there was declining teacher participation in high schools. • A general pay formula that replaced the single salary schedule was difficult to understand.
Evaluation of Tennessee's Career Ladder Evaluation System	<ul style="list-style-type: none"> • Teachers randomly assigned to the system increased math, but not reading, test scores.
B. Classroom Performance Mastery	
Evaluation of the Standards-based teacher evaluation systems in Cincinnati and Washoe County (Reno/Sparks) and Vaughn Charter School (Los Angeles)	<ul style="list-style-type: none"> • Evaluation ratings predicted value-added student achievement in reading and math. • Teachers accepted the teaching standards. • Teacher reactions were mixed for evaluation evidence required, evaluator qualifications and motivation, rating accuracy and fairness, feedback and improvement assistance from evaluator, the new system as a whole. • Administrators accept the teaching standards; reported increased workload and paperwork in implementing new system; had difficulties in providing sufficient feedback and coaching. • Impacts on teaching practice were primarily on planning, classroom management, and attention to state and district standards. • There were numerous implementation glitches that were frustrating to teachers and administrators. • There was a lack of a broader strategy in the districts to seek and drive teacher and student performance improvement. • There was a lack of alignment of human resource systems (recruitment, selection, induction, mentoring, professional development, compensation, performance management, instructional leadership) to the teaching standards. • Teachers resisted linking the teaching evaluation results to pay.

Appendix A.2. (continued) Research Findings on Knowledge- and Skill-Based Pay

Program Evaluation	Research Findings
A Study of a performance pay plan in South Carolina (included teacher attendance, professional development activities, rated classroom performance, and student achievement)	<ul style="list-style-type: none"> Teachers who received the performance bonus had higher classroom average student achievement.
C. National Board for Professional Teaching Standards (NBPTS)	
Evaluations of the relationship of NBPTS certification and student achievement in North Carolina and Miami	<ul style="list-style-type: none"> Students of National Board Certified Teachers (NBCT's) had higher value-added achievement in reading and math than students of non NBCT's in two studies; a third study showed fewer and smaller positive effects. The NBPTS program can be expensive (teacher preparation time, cost of application, salary increases or bonuses for certification), raising questions of its cost-effectiveness.
<p><i>Citations:</i> Cavalluzzo (2004); Cooper & Cohn, 1997; Dee, T., & Keys, B. (2004); Hall, G., & Caffarella, E. (1997); Heneman, H. G. III, & Milanowski, A. (2004); Heneman, H. G. III, Milanowski, A., Kimball, S., & Odden, A. (2006); Milanowski, A. (2003); Milanowski, A., & Heneman, H. G. III, (2001); Odden, A., Kelley, C., Heneman, H. G. III, & Milanowski, A. (2001); Goldhaber, D., & Anthony, E. (2004); Vandervoort, L., Amrein-Beardsley, A., & Berliner, D. (2004); Boyd, W., & Reese, J. (2006); Saunders, Ashton & Wright (2005).</p>	

Appendix A.3. Research Findings on Combined Plans

Program Evaluation	Research Findings
<p>Four-year pilot of the Denver ProComp program in 16 schools, focusing on student growth and the two annual learning objectives</p>	<ul style="list-style-type: none"> • Teachers at all school levels with higher quality learning objectives had higher student achievement. • The quality of the learning objectives increased over time, and the percentage of teachers meeting them increased to over 90%. • Teachers reported the following: <ul style="list-style-type: none"> ✓ the pilot increased teachers' focus on student achievement, ✓ they used student achievement data more effectively, ✓ changes in instruction were not due to the pilot, ✓ they were less fearful of pay for performance, ✓ there were continuing issues of fairness and trust, and ✓ there were inconsistencies among principals in reviews of teachers. • Linking student achievement data to specific teachers was challenging. • There were major problems of alignment of instructional, assessment data, professional development, and human resource systems.
<p><i>Citations:</i> Community Training and Assistance Center (2004).</p>	

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